

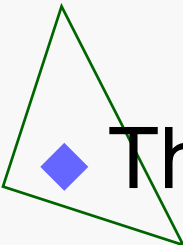
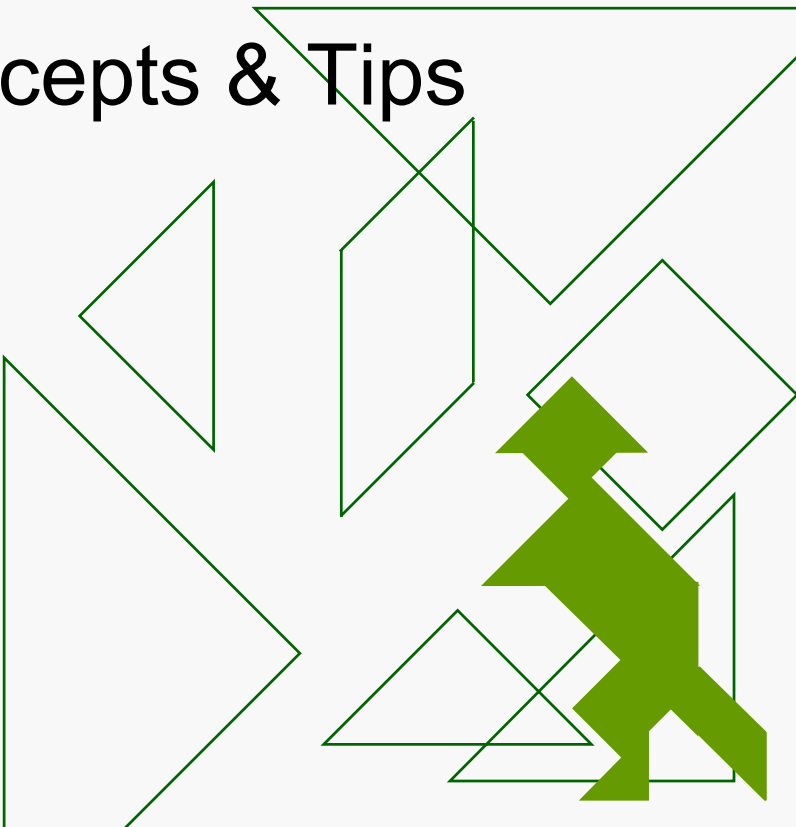
Hands on Planning Board Exercise



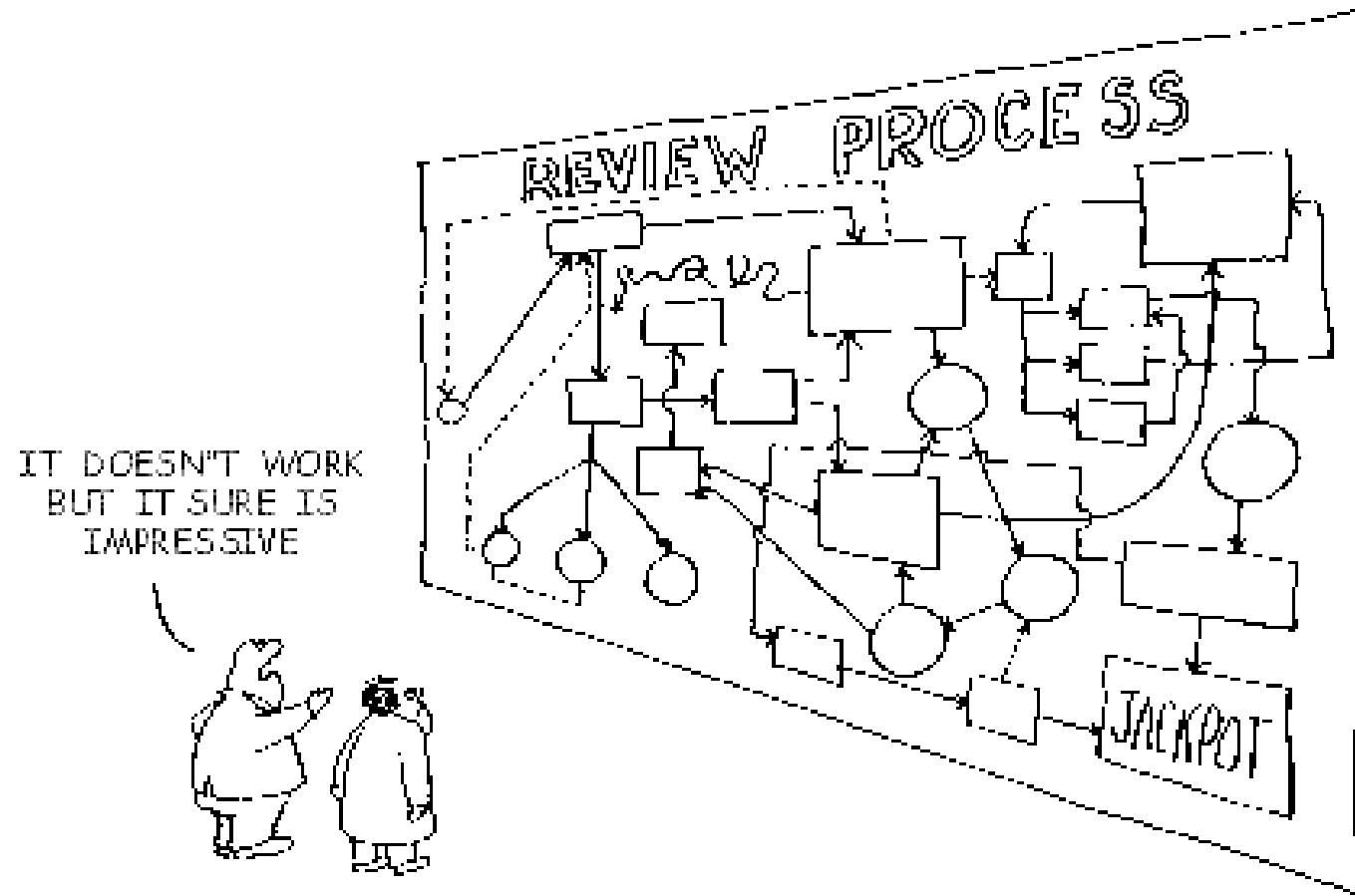
***Matthew R. Walsh,
Community Development
Project Manager
City of Concord, NH
April 12, 2004, NHTI
NH OSP Spring Conference***



Agenda

- 
- ◆ The importance of understanding plans
 - ◆ “Big Picture” Basics
 - ◆ Basic Plan Review Concepts & Tips
 - ◆ Plan Review Exercise
 - ◆ Closing remarks
- 

The Plan Review Process?!? (I Hope Not!)



HEMMAR
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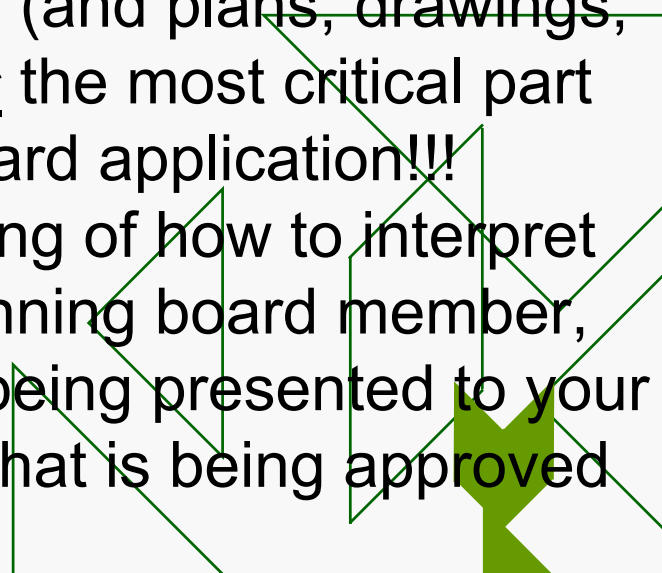
Seriously, who hasn't been here before...



The Importance of Understanding Plans



◆ Introduction

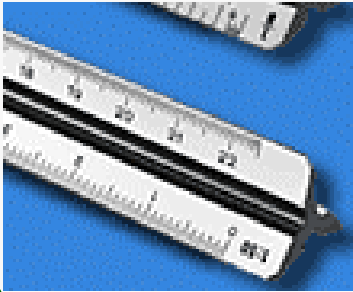
- Reading and adequately understanding site plan and subdivision applications (and plans, drawings, and pertinent documents) is the most critical part of processing a planning board application!!! Without a basic understanding of how to interpret plans, how can you, the planning board member, understand exactly what is being presented to your board??? (or even worse, what is being approved or denied???)
- 

Part 1 – Basic Engineering Concepts

◆ Before you review a plan, understand basic concepts:

- Scale
- Slope
- Soils
- Topography
- Units of Measure





Scale

- ◆ **SCALE:** All plans (whether site plans or subdivisions) are drawn to **SCALE**.
- ◆ Scale simply means “THE NUMBER OF FEET REPRESENTED BY ONE (1) INCH OF THE DRAWING”.
- ◆ Scale is typically a **RATIO**. For example, a “40” scale is typical for site plans. In that case, $1'' = 40'$ or 40:1. When reviewing plans, use a scale (they look like a 3-sided ruler).

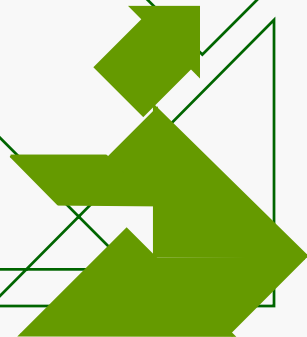
Topography

- ◆ Topography is related to slope.
- ◆ Topography (*often called “topo” by hip people in the biz*) simply refers to the “lay of the land”.
- ◆ Topography is depicted on a plan by topographic lines, which depict the change in elevation for all areas of the lot (or construction site). These lines mark the change in elevation above sea level, and are generally for every 2', 5', or 10' change in elevation.



Topography Cont.

- ◆ SIMPLE TRICK: Remember - the closer together the topo lines are on a drawing, the steeper that particular area of a lot or site is. Conversely, the further apart the lines, the more gradual, or level the site or lot is.



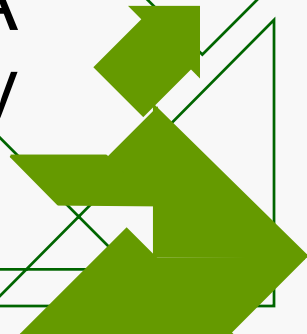
Slope

- ◆ SLOPE: Slope is an important concept to understand.
- ◆ Simply means “CHANGE IN VERTICLE ELEVATION OVER A GIVEN DISTANCE” (a.k.a. rise over run).
- ◆ For example a 3:1 slope simply means a 1' change in elevation over a 3' distance, or a 33% slope.



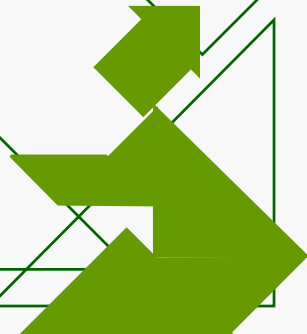
Soils

- ◆ **SOILS:** Many rural communities require soil data to be noted on a plan, but they often do not understand what certain symbols mean.
- ◆ Most rural communities require soils from the **COUNTY SOIL SURVEY** to be used. This system uses a 3-letter abbreviation system. The first 2 letters are the soil name (i.e. Gloucester, Hinckley, Scarborough). The last letter represents the slope (A – E). An “A” slope is mild (0-3%). An “E” slope is very steep.



Units of Measure

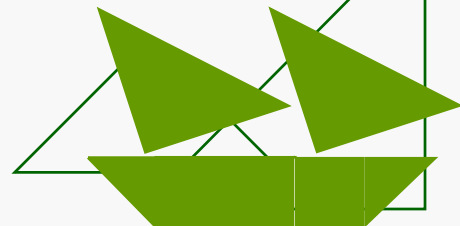
- ◆ **UNITS OF MEASURE**: These figures are always good to remember...
- ◆ 1 Acre = 43,560 square feet
- ◆ 1 Rod (a.k.a a “pole” or a “perch”) = 16.5 feet
- ◆ 3 Rods = 49.5 feet (or standard “local” street right-of-way of 50’)
- ◆ 4 Rods = 66 feet (a typical right-of-way width for older streets or “range roads” laid out in colonial times)
- ◆ 1 Mile = 5,280 feet
- ◆ 1 Yard = 3 feet
- ◆ 1 Square Mile = 640 acres



Part 2

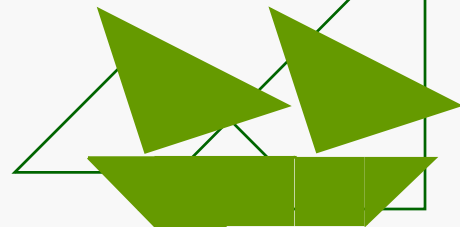
Review the Application

- ◆ The Application is important!
 - Filing Deadlines Met
 - Abutter Lists (are they complete & accurate?)
 - Is the Application Complete (Are application forms completed & signed, copies of all required drawings / studies provided, all fees provided)



Determine if the Application is Complete

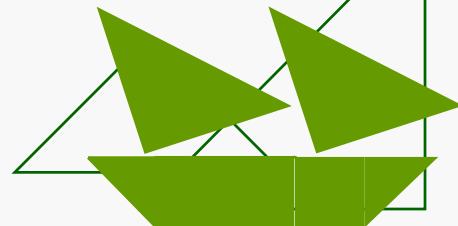
- ◆ The first step in reviewing any application and plan is to determine if the application is complete.
- ◆ ONLY a “complete” application can be officially considered by the Planning Board.
- ◆ If the Board considers an incomplete application, it may haunt them later (legal challenges by angry abutters)



The Complete Application - Application Fees

SHOW ME THE MONEY \$\$\$ Remember, fees typically include:

- Abutters fees (for certified mailings)
- Public notification/ newspaper fees (if applicable)
- Application fees (i.e. fees per lot created or fees per square foot of new building, etc.)
- Registry Fees (I recommend recording subdivisions AND site plans after final approval is received)



The Complete Application Plans & Drawings

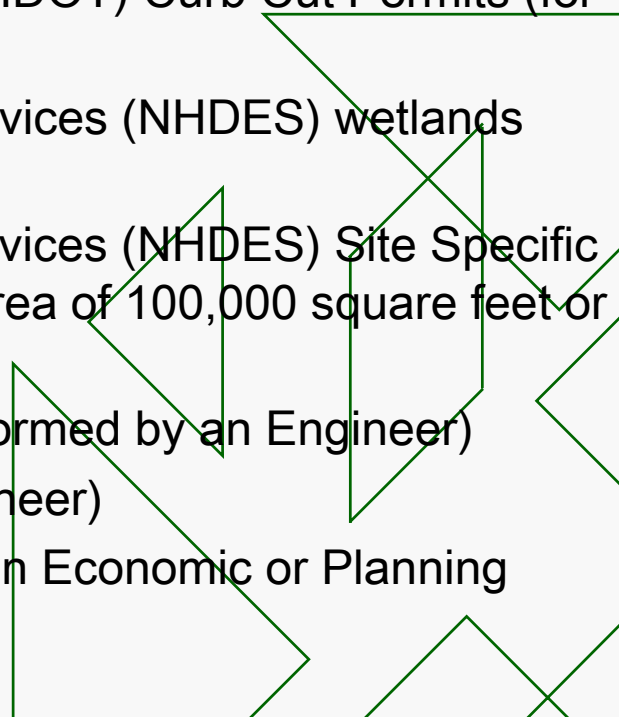
◆ Have all required PLANS & DRAWINGS (and copies thereof) been filed with the application. Required plans can include the following:

- Existing conditions plan
- Subdivision plan or Site Layout plan
- Road design plan
- Drainage plan / Stormwater management plan
- Lighting plan
- Landscaping plan
- Signage plan
- Architectural Drawings of Building Facades (a.k.a elevations) – applicable to site plans only

The Complete Application – Studies & Documents



Have all required DOCUMENTS been filed with the application?

- Draft utility easements
 - Draft drainage easements
 - Draft conservation easements
 - NH Department of Transportation (NHDOT) Curb Cut Permits (for State Roads)
 - NH Department of Environmental Services (NHDES) wetlands applications
 - NH Department of Environmental Services (NHDES) Site Specific Applications (required for disturbed area of 100,000 square feet or more.
 - Drainage studies & calculations (performed by an Engineer)
 - Traffic studies (performed by an Engineer)
 - Fiscal impact studies (performed by an Economic or Planning Consultant)
 - Environmental assessments, etc.)
- 




Part 3 - Review the Plan



What to Look For...

General

- ✓ Compliance with zoning ordinance and subdivision/site plan regulations
 - ✓ Compliance w/ NH Law
 - ✓ Design of improvements per local and state standards
 - ✓ Consistency with the Master Plan
- 

What to Look For...

◆ Natural Resources

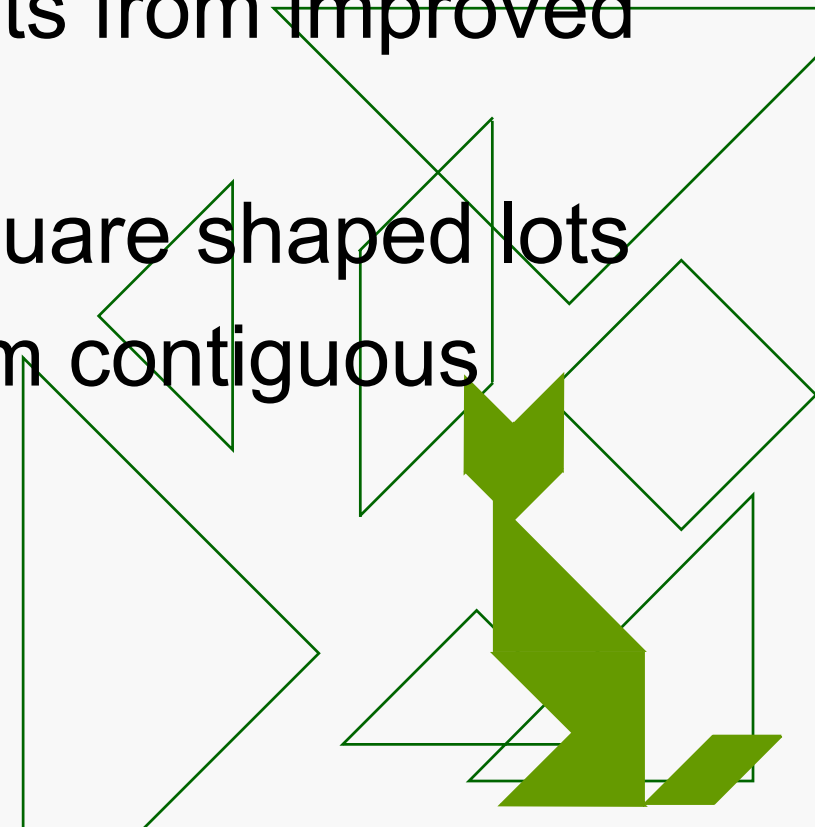
- ✓ Wetlands values & functions
- ✓ Floodplains issues
- ✓ Steep slopes avoidance
- ✓ Prime agricultural lands
- ✓ Unique natural characteristics
- ✓ Surface waters degradation
- ✓ Groundwater



What to Look For...

Lots

- ✓ Meet minimum size, frontage, and width requirements
- ✓ Provide access to all lots from improved roads
- ✓ Make rectangular or square shaped lots
- ✓ Accommodate minimum contiguous buildable areas





What to Look For...

◆ Buildings

- ✓ Make building fit in with surrounding properties
- ✓ Use traditional building forms and materials
- ✓ Orient buildings to street
- ✓ Minimize large building walls and roofs
- ✓ Screen rooftop mechanical equipment

What to Look For...

Traffic & Circulation

- 
- ✓ Ensure safe, efficient and orderly movement of vehicles and pedestrians
 - ✓ Accommodate expected traffic demand
 - ✓ Minimize congestion and delays resulting from increased traffic
 - ✓ Mitigate impacts from increased traffic
 - ✓ Upgrade existing roads where necessary
 - ✓ Integrate new streets into existing and potential street system
 - ✓ Minimize length of dead-end roads – public safety
 - ✓ Minimize number of driveways and their widths – congestion
- 

What to Look For...

Traffic & Circulation Cont.

- ✓ Space driveways adequately apart
- ✓ Make driveway approaches 90° to street
- ✓ Ensure adequate driveway turning radii, corner clearance, throat length, and sight distance
- ✓ Encourage shared driveways and service roads where appropriate
- ✓ Discourage high speed through traffic
- ✓ Ensure adequate vehicle queuing for drive-through facilities
- ✓ Provide sidewalks where necessary

What to Look For...

◆ Parking

- ✓ Ensure adequate amounts of parking
- ✓ Share parking spaces where possible
- ✓ Ensure adequate size of parking spaces
- ✓ Ensure adequate drive aisle widths
- ✓ Locate spaces convenient to building entrances
- ✓ Locate parking to side or rear of buildings where possible
- ✓ Ensure pedestrian safety
- ✓ Allow the use of alternative and/or shared parking standards for mixed-use commercial facilities
- ✓ Encourage well designed facilities for bicycle parking
- ✓ Encourage appropriate and conveniently located transit stops

What to Look For...

◆ Landscaping

- ✓ Achieve high quality site appearance
- ✓ Break up mass of buildings and parking lots
- ✓ Screen view of parking lot from streets
- ✓ Screen loading, trash disposal, storage, and service areas
- ✓ Provide buffers between residential and non-residential uses
- ✓ Retain existing vegetation where possible

What to Look For...

◆ Landscaping Cont.

- ✓ Ensure survival and maintenance of plant materials
- ✓ Set minimum sizes and heights for plant materials
- ✓ Create attractive streetscape adjacent to roadways
- ✓ Provide a list of plant materials appropriate for the planting zone and location. Salt tolerant species should be required where appropriate
- ✓ Require irrigation systems in larger commercial sites, especially in landscaped parking islands
- ✓ Ensure that existing and proposed landscaping does not interfere with overhead utilities either at planted height, or at maturity

What to Look For...

Stormwater Management



Preserve natural drainage patterns

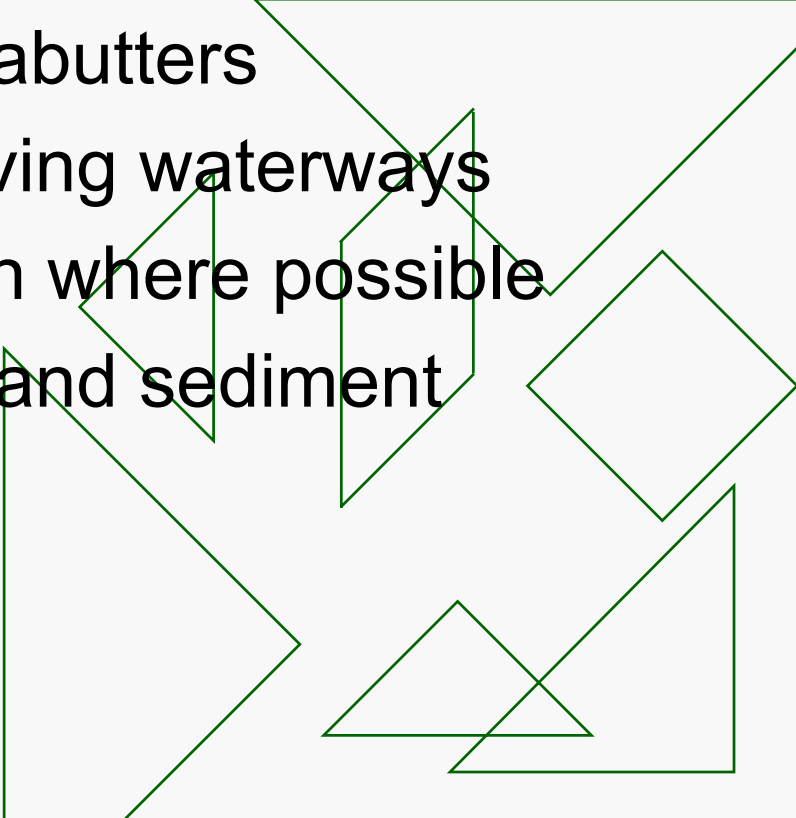
Control peak runoff rates and volumes to pre-development conditions

✓ Avoid adverse impacts on abutters

✓ Avoid degradation of receiving waterways


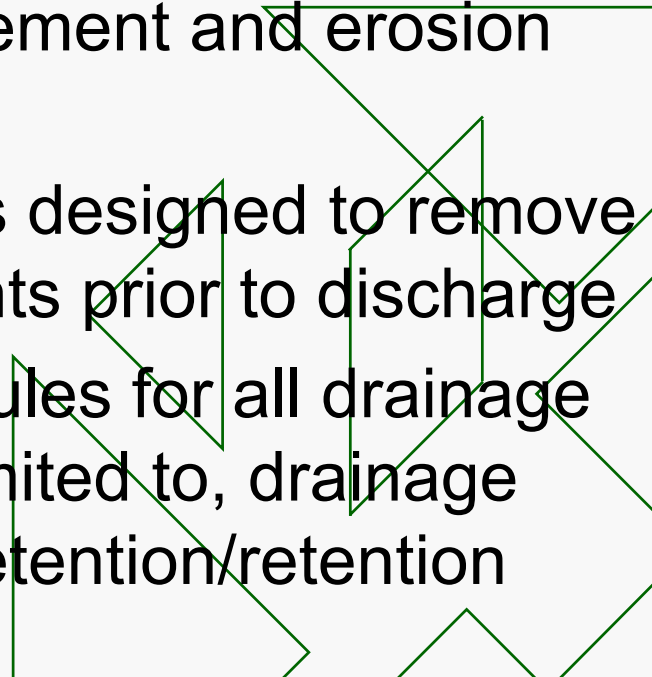
✓ Preserve natural vegetation where possible

✓ Install appropriate erosion and sediment control measures



What to Look For...

Stormwater Management

- 
- ✓ Stabilize disturbed areas and steep slopes
 - ✓ Protect wetlands and surface waters from sediment
 - ✓ Maintain stormwater management and erosion control measures
 - ✓ Require mechanical systems designed to remove oils, chemicals and sediments prior to discharge
 - ✓ Require maintenance schedules for all drainage facilities including, but not limited to, drainage swales, catch basins, and detention/retention ponds
- 

What to Look For...

◆ Utilities

- ✓ Provide utilities to meet needs of project
- ✓ Ensure availability of water
- ✓ Tie into public water supply if accessible
- ✓ Provide adequate sanitary facilities
- ✓ Design and install utilities in accordance with State regulations
- ✓ Locate leach beds in appropriate areas
- ✓ Place electric and telephone lines underground

What to Look For...

◆ Nuisances

- ✓ Minimize excessive noise
- ✓ Screen noise-generating equipment
- ✓ Limit hours of construction abutting residential uses
- ✓ Minimize offensive odors
- ✓ Minimize emission of dust, fumes, vapors or gasses

What to Look For...

◆ Outdoor Lighting

- ✓ Provide adequate and appropriate outdoor lighting
- ✓ Avoid excessive lighting and light trespass
- ✓ Limit hours of lighting operation except for security purposes
- ✓ Review height, style, and color of light fixtures and poles

What to Look For...

◆ Miscellaneous Items

- ✓ Minimize amount of impervious surfaces
- ✓ Ensure adequate trash disposal facilities in appropriate locations
- ✓ Provide adequate access by emergency vehicles
- ✓ Provide adequate fire lanes around buildings
- ✓ Provide adequate areas for snow storage
- ✓ Ensure site soils are suitable for project
- ✓ Address potentially hazardous/toxic materials

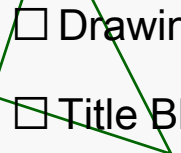
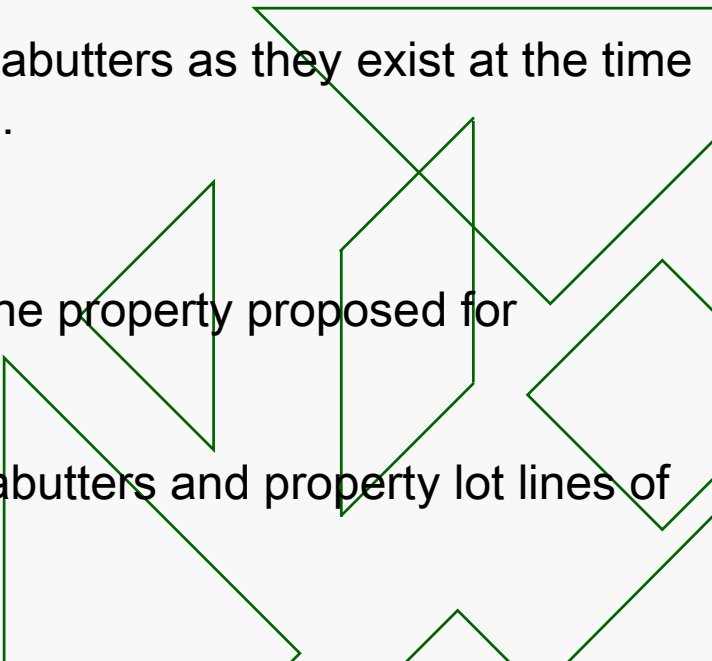

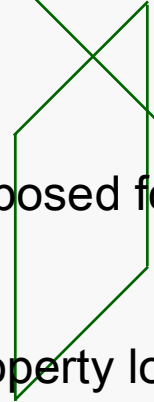

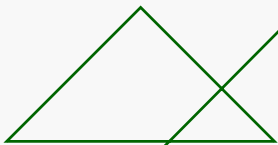



**Got it? Let's
Do it... -**



Hypothetical Site Plan Review Checklist

Town of Anywhere, NH

- 
- 
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- 
- 
- 
- ☐ Drawing Scale & Scale Bar
 - ☐ Title Block and Signature Language
 - ☐ Location Map (a.k.a. Locus Map)
 - ☐ Show current property lines for the site and abutters as they exist at the time of the Large Scale Development application.
 - ☐ Nearest street intersection indicated.
 - ☐ Show the boundaries or otherwise identify the property proposed for development.
 - ☐ Tax assessor's number (map-block-lot) for abutters and property lot lines of abutters.
 - ☐ Names and location of existing city streets.

Hypothetical Site Plan Review Checklist Existing Conditions

- ☐ Names and location of existing adjacent watercourse.
- ☐ Identification of nearby community facilities such as schools, churches or parks.
- ☐ Zoning district boundaries and zoning district designations for the site and abutting properties.
- ☐ North Arrow
- ☐ Notation of the date the plan was prepared, with box for revisions.
- ☐ Drawing / Plan Sheet Size (22" X 34") – Registry

Hypothetical Site Plan Review Checklist

Existing Conditions Plan

Existing Site Conditions

- ☐ The name, address, signature, and seal of the licensed engineer or surveyor who prepared the plan.
- ☐ Property lines for the parcel to be developed with bearings and dimensions.
- ☐ Full names and addresses of all abutters of the property.
- ☐ Title reference for book and page number of the lot from the Merrimack County Registry of Deeds. Title reference shall not be more than 5 days old at the time of filing.
- ☐ Zoning district designation and boundaries including Floodway and Floodplain Districts.
- ☐ Building set back lines and dimensions.
- ☐ The location of existing features such as water courses and bodies, parks, open space, large trees, foliage lines, rock outcrops, railroads, buildings and significant natural and man-made features. Other pertinent features such as, but not limited to, wetlands, cemeteries, and drainage ditches.

Hypothetical Site Plan Review Checklist

Existing Conditions Plan

Existing Site Conditions Cont.

- ☐ The location of all existing buildings, structures, fences, stonewalls, driveways, parking and any vehicular use areas.
- ☐ The location and dimensions of existing driveways, curb cuts, parking lots, loading areas, or any other vehicular use areas.
- ☐ The location of all existing access points (driveways) onto city streets.
- ☐ The location, travel way width, and right-of-way of all existing adjacent city streets, as well as mapped future streets.
- ☐ The location, dimensions and purpose of any easements or rights-of-way.
- ☐ Existing topographic conditions, and all proposed changes in ground elevation at a contour interval of two (2) feet referred to sea level datum of the US Coast and Geodetic Survey.

Hypothetical Site Plan Review Checklist

Existing Conditions Plan

Existing Site Conditions Cont.

- ☐ Where the land slopes less than two percent, spot elevations shall be shown at all breaks in grade, along all drainage channels or swales, and at selected points not more than 100 feet apart in all directions.
- ☐ Finished floor elevations and minimum finished floor elevations required within the Floodway or Floodplain Zoning District, if applicable.

Hypothetical Site Plan Review Checklist

Existing Utilities

Existing Utility Information

- ☐ The location, size, and invert elevations of existing sanitary and storm sewers including manholes, catch basins, and culverts.
- ☐ The location and size of all existing water mains including hydrants, gates, valves, and blowoffs.
- ☐ The location of wells and subsurface disposal systems if the property is not served by municipal water and sanitary sewers, including those on abutting property.
- ☐ The location of all existing non-municipal utilities including electric, telephone, gas, steam and CATV systems, along with Fire Alarm cables, both on-site and within abutting rights-of-way.
- ☐ The type and location of existing solid waste disposal facilities.

Hypothetical Site Plan Review Checklist

Proposed Site Plan

Proposed Site Plan (The existing condition plan and the site plan may be combined if the existing condition information remains legible.)

- ☐ The plan shall be prepared by a registered land surveyor or engineer who shall sign the plan and place his/her seal upon it.
- ☐ Property lines of the parcel to be developed including bearings and dimensions.
- ☐ Zoning district designation and boundaries including the Floodway and Floodplain Districts.
- ☐ Building setback lines and dimensions.
- ☐ The location, use and dimensions of all existing and proposed buildings and structures including fences, stonewalls, towers, mechanical equipment, etc. Separately identify proposed additions to buildings and structures.
- ☐ The location and dimensions of existing and proposed driveways, curb cuts, parking lots, loading areas, or any other vehicular use areas, including the number of parking and loading spaces per bay, and the designation of spaces for compact vehicles and the handicapped.

Hypothetical Site Plan Review Checklist

Proposed Site Plan

Proposed Site Plan (The existing condition plan and the site plan may be combined if the existing condition information remains legible.)

- ☐ The location and dimensions of existing and proposed pedestrian walkways, sidewalks and other paved surfaces, both on-site and within abutting rights-of-way.
- ☐ The location, travel way width, and right-of-way of all existing adjacent city streets, as well as mapped future streets.
- ☐ Finished floor elevations and minimum finished floor elevations required within the Floodway or Floodplain Zoning District, if applicable.
- ☐ The location and size of existing and proposed ground signs.
- ☐ Existing topographic conditions, and all proposed changes in ground elevation at a contour interval of two (2) feet referred to sea level datum of the US Coast and Geodetic Survey.
- ☐ Where the land slopes less than two percent, spot elevations shall be shown at all breaks in grade, along all drainage channels or swales, and at selected points not more than 100 feet apart in all directions.

Hypothetical Site Plan Review Checklist

Proposed Site Plan

Proposed Site Plan (The existing condition plan and the site plan may be combined if the existing condition information remains legible.)

- ☐ Wetlands, steep slopes greater than 15% and greater than 25%, and contiguous useable land area calculations.
- ☐ The location of existing natural and man-made features including but not limited to vegetation, rock outcrops, parks, open space, railroads and surface water bodies and courses.
- ☐ Fire lanes and fire access for fire apparatus.
- ☐ Existing and proposed site lighting including pole and luminaire locations, detail of pole and luminaire including wattage. A lighting plan showing light levels in foot-candles may be required.

Hypothetical Site Plan Review Checklist

Proposed Utilities

Proposed Utilities

- ☐ The location, size, and invert elevations of existing and proposed sanitary and storm sewers including manholes, catch basins, and culverts, both on-site and within abutting rights-of-way.
- ☐ The location and size of all existing and proposed water lines including hydrants, gates, valves, and blowoffs, both on-site and within abutting rights-of-way.
- ☐ Profiles of sanitary and storm sewers.
- ☐ Details for pump or lift stations, manholes, catch basins, fire hydrants, etc. The use of standard city details are required when available unless otherwise approved by the Town/City Engineer.

Hypothetical Site Plan Review Checklist

Proposed Utilities Continued

Proposed Utilities

- ☐ The location and size of all existing and proposed private underground and overhead utility improvements including but not limited to gas lines, electric transmission lines, telephone transmission lines, cable television, steam distribution mains, and fire and police alarm transmission lines. The location of all manholes, transformers, poles and other appurtenant facilities or structures shall be shown.
- ☐ The type and location of existing and proposed solid waste disposal facilities.
- ☐ Profiles, details and construction standards for all municipal utilities.
- ☐ 10 year and 25 year storm runoff estimates, including all calculations, shall be submitted providing an analysis of the site projected in its fully developed state.
- ☐ In the absence of municipal sanitary sewers, the soil data and test results as submitted to the State of New Hampshire Water Supply and Pollution Control Division for approval of a subsurface waste disposal system.

Hypothetical Site Plan Review Checklist

Proposed Utilities Continued

Proposed Utilities

- ☐ In the absence of municipal sanitary sewers, soil data and test results sufficient to submit an application for subdivision approval to the State of New Hampshire Water Supply and Pollution Control Division, including a plan showing the location of test pits, the soil profiles, ground water elevation, and seasonal high water table elevation at each test pit.
- ☐ The location of existing and proposed wells and subsurface waste disposal systems if not served by municipal water and sanitary sewers, including those on abutting property.
- ☐ In the absence of municipal storm sewers, a plan and information shall be submitted indicating the proposed method of collecting and disposing of storm water runoff resulting from the development of this site. All swales, drainage ditches, culverts, easements, detention and retention ponds shall be shown including such elevations and cross-sections as may be necessary

Hypothetical Site Plan Review Checklist

Proposed Landscaping Plan

Landscaping

- ☐ The location, size and type, including common and botanical names, of all new plant materials to be installed.
- ☐ The location, size, and common and botanical name of all existing plant material to be retained or relocated.
- ☐ The location, width, and material of all walkways and pathways.
- ☐ The location, type, materials, and dimensions of all fences, walls, and outdoor recreational facilities.

Hypothetical Site Plan Review Checklist

Tabulations to be Shown on Plan

Tabulations

- ☐ Gross acreage - Lot size in square feet is recommended for projects less than 1 acre.
- ☐ Square feet or acres devoted to the various uses.
- ☐ Ground coverage of buildings and structures in square feet and percent.
- ☐ Ground coverage for parking and loading areas including aisles and internal landscaping in square feet and percent.
- ☐ Internal parking lot landscaping in square feet and percent.
- ☐ Impervious surface coverage in square feet and percent.
- ☐ Buildable land area calculations for residential development and net land area calculations for non-residential development.

Hypothetical Site Plan Review Checklist Tabulations to be Shown on Plan

- ☐ Total number of dwelling units, and total numbers of dwelling units by type and number of bedrooms.
- ☐ Square feet of floor area by type of use for all non-residential uses.
- ☐ Projected number of employees by shift if necessary for calculating required parking.
- ☐ Building occupancy or fixed seating if necessary for calculating required parking.
- ☐ Calculations of required parking and loading areas, including handicapped and compact spaces.
- ☐ Parking and loading areas provided including handicapped and compact spaces.

Hypothetical Site Plan Review Checklist

Proposed Architectural Renderings

Architectural elevations shall be prepared by a registered architect or engineer who shall sign the drawings and place his/her seal upon it.

- ☐ Architectural elevations of all sides of all new buildings and of those sides or areas which are proposed to be altered showing the following types of information:

- Exterior materials and colors.

- Type and pitch of roofs.

- Size, spacing of windows, doors, and other openings.

- Size, location, colors, and copy of signs to be affixed to, or hanging from, the building.

- Size, height, colors, and copy of proposed ground signs.

- Size, type, and location of towers, chimneys, roof structures, flagpoles, antennas and similar structures.

- ☐ The relationship in bulk and height to other existing structures in the vicinity.

- ☐ Photographs of all existing facades and adjacent buildings and lots.

SUGGESTIONS!

1. GET ALL PB MEMBERS INFO: Get all members of your Planning Board copies of the (1) Master Plan, (2) Subdivision Regulations, (3) Site Plan Review Regulations, (4) Zoning Ordinance, and (5) Capital Improvements Plan. These are critical documents which board members must be familiar with!
2. DESIGNATE SOMEONE TO REVIEW PLANS: If you don't have professional staff, designate one or two members of the board to do application review!
3. TAKE NOTES - Take notes during your plan review. If you don't accept an application because its incomplete, the developer will want to know why so he can make corrections.
4. HIRE A PROFESSIONAL CIVIL ENGINEER to assist the board with technical review of road, parking lot, lighting, and drainage designs. Under state law, you can charge the applicant for these fees.
5. EASEMENTS! Remember, showing them on a plan is not good enough – the Town needs written deed descriptions for all easements to be recorded which reference the plan.

SUGGESTED REFERENCE MATERIALS

- “STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE”. New Hampshire Department of Environmental Services, August 1992.
- “Outdoor Lighting Manual for Vermont Municipalities”, Chittenden County (Vermont) Regional Planning Commission, 1996.
<http://www.ccmppo.org/>
- “TRIP GENERATION MANUAL, 6th Edition” Institute of Traffic Engineers (ITE). www.ite.org. Cost \$250.00, non-ITE members.
- NH OSP Planning & Zoning Handbooks – Latest Editions
- New Hampshire Office of State Planning Website:
www.state.nh.us/osp/

End

